UNIVERSITY OF MINNESOTA COMPUTER CENTER
Deadstart Systems Newsletter

12 September 1978 Vol. 4, No. 17

Send all comments, criticisms and contributions to the editor: T. W. Lanzatella
University Computer Center, 2520 Broadway Drive, Lauderdale, MN 55113
The University of Minnesota is an equal opportunity educator and employer.

TABLE OF CONTENTS

NOTICE OF CHANGES TO THE SYSTEM

NOS Changes

Due to the continued large volume of corrections being installed into the system, we are still installing new NOS systems as soon as they are working rather than waiting for the usual Thursday installation day. I expect that this recent new system (SID=AU) will be the last of such installations. This system was installed on Sunday, 10 September.

Larry Ozga installed a change to the disk driver 6DI which reverts to the old release 3 version of disk error messages. The new messages were mostly garbled.

Tom Lanzatella installed a temporary change to MAGNET which restores dependable end-of-tape processing. Though not the preferred solution, subsequent reels of a multi-reel file are not now being validated. This shortcoming will be fixed when time permits.

Kevin Matthews installed the following changes.

1) A new PP program UQM was installed. This program will be used to manage our shared queue files. The program is currently being called in several places but drops out immediately.

2. Common decks COMPSEA and COMSEFT were altered with documentation changes.

3. Common deck COMSPMS was corrected so that the PP programs ADC (Andy Capp Display) does not appear to be the most called routine in the system.

4. Kevin repaired an error in PFM which had caused several system crashes. The problem was caused by the locally developed Protected permanent file feature in PFM. A GET request was causing PFM to request tracks twice.

5. Kevin installed a temporary kludge into ACCFAM which adds 8 seconds to any job card time limit which is less than 8 seconds and leaves unchanged any job card time limit greater than or equal to 8 seconds. This change will likely stay in the system until we understand time limits.

Don Mears installed the following changes.

1) Program DSD was enhanced to include TID on the Q and the H displays.

2) Don converted the old KRONOS modset PURGEM which installs the PURGE with message DSD command.

3) Don added a TS=TTYD option to the CONVERT utility.

4) Don added the following accounting message SBSC, SBSL and SBSP (JKF note).

5) Don installed a new common deck COMPIMF which is used to issue account file messages.

6) An unspecified error was repaired in CHKPORT.

7) Program LKT, the link test was altered as follows:

   a) The T=A test now works.
   b) The LS parameter now works on all links.
   c) Program LKT can now be rolled.
   d) Program LKT will now observe certain sense switch options.

Tim Salo installed the following changes.

1) All local features to the line printer test, LPT, were converted to NOS.

2) All space-saving enhancements in 1CD were combined into a new modset GEN1CD.

3) Unspecified but large changes were made to ASCII character conversion.

4) Program SEND was altered to function under NOS (see DSN 4, 14 p. 111 and DSN 4, 12 p. 124).

Marisa Riviere installed documentation changes to CALLPRG and changed the default pack used by CALLPRG to SPL.

Tim Hoffmann installed the first iteration to the AUTODIVERT facility. Tim also repaired an error in ISF which caused the innocuous error message ILLEGAL FILE NAME. Additionally, Tim repaired a system crashing bug in SETRFL processing in CPM.

Brian Hanson installed the following changes.

1) A source of COPYMF was introduced and a mod to MAGNET/UFM was installed which allows UFM to rewrite tape labels.

2) Brian installed his proposed ASCII permanent file attribute (see DSN 4, 16 p. 130).

Hesung Byun installed his feature to the DSD N-display which allows the operator to skip to EOI-1 if the "+" key is pressed after entering DISPLAY,n. at the console keyboard.

Bill Sackett converted the PFP/PFPACK utility to run under NOS. Bill also altered the COST utility to know about user ECS charges.

Jeff Drummond installed the following changes.

1) DSD was altered so that the FIND command will also locate a job on the A-display.

2) Jeff repaired the I/O Sequence errors in SUBMIT.

3) Program RESEQ was repaired to use a FET of sufficient length and to avoid the FET TOO SHORT error.

4) Jeff installed a mod from PSR summary 474 which corrects erroneous RING CONFLICT messages in 1MT.

5) Jeff installed a mod from PSR summary 472 which repairs CPUMTR and avoids a STEP mode hangup.

6) The TRANSIT facility was altered to use new ECS allocation code introduced by KCM.

Brad Blasing added the following changes.

1) Program DSP was altered to ensure that a queue file bound for an alternate machine actually resides on a shared device.

2) Program TDUMP was altered to check the users terminal type before printing the report. This change was promoted by the recent character set change.

3) USERS/DSD was changed so that the B and J displays are correct; so the E,M display indicates shared status; and to add a new M-display (for ECS).

Steve Collins installed his proposed change to MODVAL (see DSN 4, 15 p. 123). Steve also installed the following changes into XEDIT.

1) The REPLACELN command was corrected to replace line numbers only on lines which already have line numbers.

2) All permanent file error messages should now be processed correctly.

3) XEDIT now checks for commands and prefix characters which are illegal in input and creation mode.

4) Terminal control is now disabled for all TELEX origin calls to XEDIT.

5) A bug was repaired where if a HELP command is interrupted, XEDIT always leaves the user in normal mode even if XEDIT was entered in ASCII mode.

KRONOS Changes

The following changes will be installed on Thursday, 14 September.

Brian Hanson installed the ASCII permanent file attribute (see DSN 4, 16 p. 130).

Don Mears installed a TS=TTYD option into the CONVERT utility.

Marisa Riviere installed changes to CALLPRG and RFM which render the default versions of these packages functional on the 6400.

Steve Collins installed a version of XEDIT with changes described above.

Kevin Matthews and Jeff Drummond reinstalled several ECS/intermachine related programs to stay compatible with the NOS system.

PROPOSED CHANGES TO THE SYSTEM

COPYFA, Copy Fast Attach File Utility - by M. Riviere

I propose to write a utility program, COPYFA, whose main purpose would be to rewrite a fast attach file without requiring empty queues and idle control points as it is now currently required for the ISF processor. In addition, COPYFA could also be used to produce a local copy of a fast attach file.

The calling sequence could be:

COPYFA (FANAME) for the rewrite mode
and
COPYFA (FANAME, LFNAME) for the copy retrieval mode
where
FANAME = name of the fast attach file to be rewritten or retrieved.
LFNAME = name of the local file to contain the copy of the fast attach file.

In the rewrite mode, that is when only one parameter is used, COPYFA will copy a local file named FANAME to the fast attach file of identical name. COPYFA will not accomplish the copy operation if the local file does not exist or its length is of zero or 1 sector or if the fast attach file is not available for a reason other than being busy. If the fast attach file is busy, COPYFA will wait for it to be ready in a recall loop.

If COPYFA cannot perform the copy operation, it will output an explanatory dayfile message. If the copy operation is performed, COPYFA will output a dayfile message showing the difference in the number of sectors between the old and the new version of the fast attach file. In addition, COPYFA will leave a copy of the old version of the fast attach file available for the calling job in a local file called OLDFA.

In the copy retrieval mode, that is, when two parameters are used, COPYFA will only retrieve a copy of the requested fast attach file. COPYFA will run only for system origin jobs and will abort with an error message for other kinds of jobs origin. COPYFA will rewind all the used file (FANAME, LFNAME and OLDFA) before and after execution of the copy task.

//////////

Sub-Type Libraries - by S. Collins/M. Timmerman

1) We propose adding an -ST- parameter to the *CHANGE*, *DEFINE*, *RETAIN*, *SAVE* and *CATLIST* control cards. This parameter will be used to set the first seven characters (42 bits) of the user control word (UCW). For example: SAVE,FILE/ST=ABCD9 would set the UCW to 42/5LABCD9. *ST=0* would clear the 42 bits to zero. On the *CATLIST* control card, this option would cause *CATLIST* to list only those filenames for which the first seven characters of the UCW matches the entry given on the *ST* parameter. This would enable users to "DEFINE" and manipulate sub-type libraries within their single catalog of files.

2) We also propose adding a list option to the *CATLIST* control card. This option would be of *LO=UCW* and would list the octal and display code of the user control word.

   The original purpose of this proposal was to assist users in sorting through the hundreds of files on usernumber *LIBRARY*. For example, if sub-types were defined, a user could simply enter CATLIST(UN=LIBRARY,ST=STAT) if he wanted a list of all the statistical programs. However, with the generality of the implementation of this idea, any user can use it on his own catalog.

//////////

Shared File Cost - by T. J. Hoffmann

To allow CATLSYS and PFCOST (etc.) to determine file cost for shared files, I propose the following UFM function:

ENTRY (IR+3 - IR+4) = Address of packname.

EXIT ((IR+3 - IR+4)) = 42/Packname, 15/0, 1/s, 1/r, 1/c

s = Set if Shared Pack.
r = Set if Removable Pack.
c = Set if Pack found.

//////////

Additional Information With The ABUN Message - by A. Bremanis

I wish to propose a system date stamp addition to the begin job message (ABUN-account dayfile), in order to produce itemized daily/monthly expenditures for each job session which the users perform.

This report will be produced at the users request for any or all of their account numbers. In the future this will also be true of charge and project numbers. I have attached an example of the report.

The additional information needed could be implemented in the following way:

HH.MM.SS.JOBNAMESI.ABUN.ßACCTNUM,FAMILY,LOWRATE,YY/MM/DD.

Column 34 which was a period changes to a comma and the date follows with a period. ~~If (LOWRATE, PRIME, ETC,) EXISTS, the period after the date stamp (column 43) changes to a comma.~~

//////////

New Assembly Options - by E. A. Schleske

I would like to propose adding conditional assembly to the common decks COMCRDW and COMCWTW.

COMCRDW contains three subroutines, RDW=, LCB=, and RDX=, of which only the latter two are used by COMCRDC, COMCRDH and COMCRDS. However, it is at present impossible to access LCB= and RDX= without also getting RDW=, which obviously makes programs larger than they need to be. An analogous situation exists for COMCWTW.

I propose that if either or both of the symbols NORDW$ / NOWTW$ are defined, the corresponding subroutine(s) not be assembled. This will save 76B words in the case of RDW=, and 65B in the case of WTW=.

//////////

Status Quo - by S. E. Collins/A. B. Mickel

The character set task force recommended enhancing the status display in TELEX to show whether a user is in ASCII or NORMAL mode. We propose adding a line to the *STATUS* and *ENQUIRE* command display, which will show either *MODE: NORMAL* or *MODE: EXTENDED*.

SYSTEM MAINTENANCE: People and Procedures

Last Week's Systems Group Meeting - by T. W. Lanzatella

1) The following proposals were accepted, rejected or relegated to the System Strategy Committee.

   a) Larry Ozga's proposal for a faster CONTROL was approved (see DSN 4, 16 p. 128).

   b) K. C. Matthews' proposal for how to deal with big batch jobs could not be resolved and was relegated to the System Strategy Committee (see DSN 4, 16 p. 129).

   c) Brad Blasing's proposal to add a copy option to ROUTE was rejected as not being useful (see DSN 4, 16 p. 129).

   d) Brian Hanson's proposal for a ASCII permanent file attribute was accepted (see DSN 4, 16 p. 130). We did note, however, that we should be careful about which bits in the UCW will be taken since some users are using this word.

//////////

Callprg and Library Tape News - by M. Riviere

On September 12, the NOS Library tape was updated with new versions of FILE, SORT/MERGE, COBOL4, COBOL5, CB4LIB, CB5LIB and SYSIO. These products were supplied by Steve Reisman. Steve also changed his Callprg products COPYCL, COPY8P, ESTMATE, FORM, IXGEN, SISTAT, SMTEXT and TXT6RM and also the entry for CDCIO to retrieve the current version of SYSIO as MSUIO for MNF programs. All these modifications were done in order to reinstall this product set accordingly with the new character set. Although SORT/MERGE, COBOL4, COBOL5 and the Advance Record Manager section of SYSIO are the only products directly affected by the new character set, all the rest of the products are using SYSIO routines and they may also be affected by the change.

In addition, Steve replaced SYMPL with a new version, still level 460, but with the new binary created by using the current version of the SYMPL 460 compiler. This new version requires a smaller field length than the one used up until now.

Also on September 12, entries for two new fetch type packages were added to the NOS Callprg index. These packages are MINITAB, a new interactive statistical package, supplied by Betty Hinkley and YSMPLIB, a matrix program library supplied by Jeff Woolsey.

//////////

The System Strategy Committee - by T. W. Lanzatella

After a lengthy respite, the famed System Strategy Committee was reformed this week. In attendance were L. A. Liddiard, K. C. Matthews, T. W. Lanzatella, A. Nelson and E. J. Mundstock.

1) Our first topic was: (a) where did all the CM go under NOS? and (b) how can we increase throughput? We all noted that CMR has grown under NOS to the extent that large Batch jobs (155k) are being locked out by small time-sharing jobs. We decided to decrease the TXOT AM service limit from 110K to 74K. We also noted that EXPORT is sometimes growing to 23K during the day. Tim Salo will have to look at this when he returns. We also will seriously consider removing UCC as a shared pack since this consumes TRT space on both sides and is really only used from one side (C172). To help increase tape job throughput, many 1MT overlays were moved to ECS. Also, an important feature in the KRONOS version of UFM was the ability to always force a tape job into execution if no others are active. This feature was lost in the conversion, may be important and will be reinstalled as soon as possible. Additionally, we will try to adjust input queue priorities to prevent the rollout queue from getting too large. If this fails, maybe operators should have the option of not allowing jobs to move from the input queue into execution.

2) Our second topic was the KCM big batch job proposal (see DSN 4, 16 p. 129). This was discussed at the last Systems group meeting but could not be resolved. A proposal will be published soon but the basic suggestion can be stated briefly. Users who intentionally want to use more than 110K must specify the desired CM on the job card and the job will not run until after 6:00 p.m. This scheme remains compatible with existing user documentation.

3. The last topic was how to deal with our dwindling supply of disk space. This topic was inspired by a 200% increase in staff use of the permanent file base over the past year. Some time was spent discussing the method by which this figure was derived and resulted in a revised 100% figure--still startling. In any case, the only real solutions we thought of were: (1) make some UCC groups pay for their disk usage, and (2) buy more disks.

Along the lines of #2, Larry described a new device from CDC (not yet available) which holds the equivalent of five double-density disks, is comprised of two spindles and is not removable.

//////////

Disks - by T. W. Lanzatella

In preparation for getting rid of pack STF in the near future, the system procedures U and K will be altered on the next new system (SID=AV) so that procedures are retrieved from pack SPL. All people who maintain procedures under the special user index 377772 should change their procedures to check MID and to behave accordingly.

Unrelated to the above change, we have noted recently that pack UCC is very full and contains many unaccessed files. To remedy this situation, pack UCC will be initialized without reload on Saturday, 16 September.

//////////

Callprg and Writeup Files on STF/SPL - by M. Riviere

At the beginning of April all the Callprg and Writeup files residing on the STF pack in the Cyber 74 were copied to the SPL pack in the Cyber 172 in order to make Callprg products and Writeups immediately available in the new NOS system. Please note if any modification made to Callprg and Writeup files residing only on the STF pack since that date also needs to be implemented in a file with identical name residing in SPL. The files residing now on STF are no longer used and they should be purged. Please check your files on SPL to assure that they are your latest update or replace them by the latest version from STF, if needed. Also purge your STF files after that. The STF pack will no longer be available after October first and it is not a bad idea to start releasing the disk space as soon as the files on SPL are reviewed for accurate data.

//////////

Cyber 74/172 Deadstart Dump Analysis from 20 August through 10 September - by K. C. Matthews

Note: Rather than analyzing each deadstart we will summarize the major problems encountered or signed.

On Monday, 21 August, there were some programs (like XEDIT) which began giving mode 0 errors. This was caused by an error in storage move processing which caused random locations in ECS to be zeroed.

Also on Monday the input file FNT pointer for jobs at control points 2 and 3 was being clobbered. It turned out that this was happening on occasion to all words at addresses 20 B * N + 11 B where 15B $\leq$ N $\leq$ 37 B.

The problem was in SUPIO and was corrected on Wednesday, August 23.

There were many other hangs on Monday, Tuesday, and Wednesday, but most were not analyzed since efforts were concentrated on the word clobber problem. On the Cyber 74 there were 7 unscheduled deadstarts on Wednesday and 9 on Tuesday.

On some of the recovery deadstarts during the first full NOS week, all the magnetic tape jobs seemed to disappear. This problem has not occurred since an older version of MAGNET was added to the system later in the week.

Saturday and Sunday, August 26 and 27, were good days but the load was very light. It appeared that most of the remaining stability problems appeared when the load was heavy.

On Monday, 28 August, there were several track limits. All of our disks were getting full and the program PFPACK (which salvages permanent file hole space) was not yet running. PFM hung several times during the week. The problem turned out to be an error in the PFM code for GET requests when the disks are all fairly full.

A TRT linkage error occurred on Monday, 28 August, caused probably by the PFM bug. We were unable to locate the bad track by our old KRONOS method. So we decided to initialize and reload the device. But that didn't work either. There was a problem in the initialization of auxiliary permanent file devices. This problem was eventually fixed. But on that night we had to deadstart KRONOS to initialize the bad device.

Export (EHS) hung at least once a day during this period and continues to do so.

The system crashed several times when the CE diagnostic program was running. This worked fine under KRONOS, but we haven't yet had a chance to determine the problem in NOS.

TELEX was down all day on the 172 on 29 August because of a hardware problem in the Link.

There is a problem with end-of-reel processing for Multi-File tapes. The problem cannot be reproduced consistently. For the present, validation of the second reel has been disabled to avoid the problem.

PP program 1CJ hung several times on Wednesday, September 6. It had probably hung in the same fashion before, but those crashes were lost in the noise of the earlier weeks. The problem was in some CDC code of which we were using a prerelease. The actual release 4 version of the code had the problem corrected.

One problem that existed for about a week in the middle of all this was the input files were not being preserved. Then, on a level 0 deadstart, all input files were lost. This caused a lot of confusion and rerun jobs during the week of 28 August - 1 September.

//////////

6400 Deadstart Dump Analysis (8/6 - 9/10) - by R. A. Williams

Date	Description	Tape
780810	CPUMTR went into a program stop after being written over for unknown reasons.	DDT-17
780812	There were several PP programs hung at the TELEX control point. There has been little time for analysis of this dump to date.	DDT-16
780821	The 844 controller broke and wiped out the permanent files in the process.	Fixed
780822	The power went off in the building causing a system abort.	N.A.